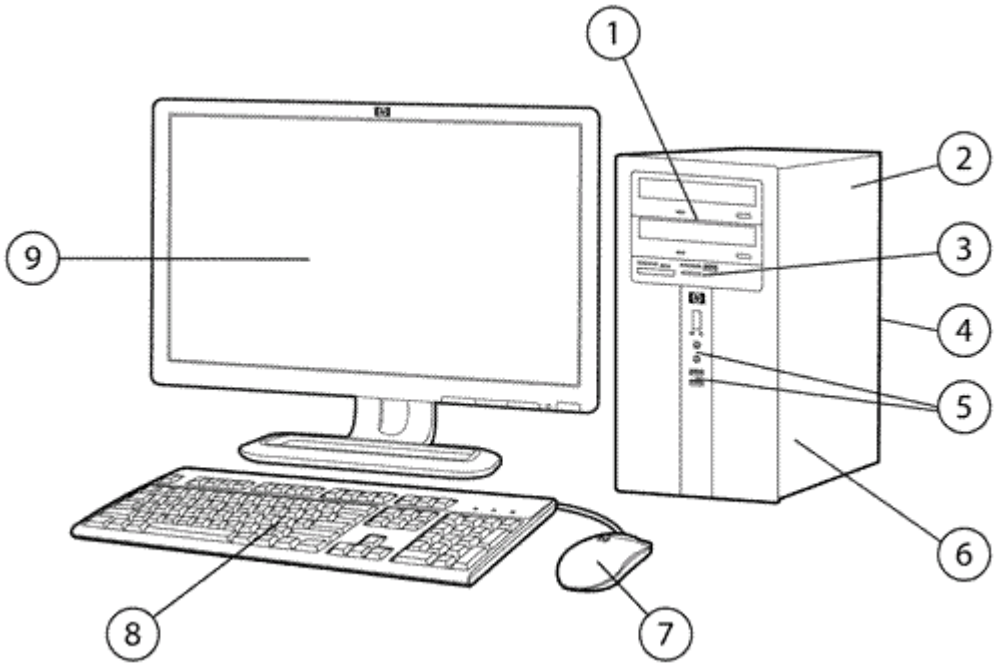
Overview

HP recommends
Windows Vista® Business



1. (2) external 5.25" drive bays for optional optical drives; (2) internal 3.5" hard drive bays
2. 250W PFC power supply
3. (1) external 3.5" drive bay for optional media reader or diskette drive
4. Rear IO: (4) USB 2.0 ports, (2) PS/2, (1) RJ-45, (1) VGA, (1) Parallel, (1) COM, (1) line in or Rear Speaker Out (for 4 or 5.1 channel); (1) line out or Front Speaker Out(for 4 or 5.1 channel); (1) Mic in or Center/Subwoofer Speaker Out (for 5.1 channel only)
5. Front I/O: (2) USB 2.0 ports, (1) MIC - (1) audio out (Headphone)
6. 2) full-height PCI 2.3 slot, (1) PCIe x1 slots, (1) PCIe x16 slot
7. PS/2 Scroll Mouse
8. HP Standard Keyboard
9. Monitor (sold separately)

Overview

At A Glance

- Support for VIA C7-D Model D 1.8G single core processor
- Choice of operating systems:
  - Genuine Windows Vista Business 32
  - Genuine Windows Vista Home Basic
  - Genuine Windows Vista Business with downgrade to Windows XP Professional custom installed
  - Genuine Windows XP Home
  - Red Flag
  - FreeDOS
- VIA CN896 North Bridge
- Legacy parallel and serial port support
- VIA VT8237S South Bridge
- VIA Chrome9™ HC Integrated Graphics with 2D / 3D / Video Controllers
- PCI Express 1.1 I/O bus
- Serial ATA 2.5 controller
- Realtek 8110SC Gigabit Ethernet Controller
- Choice of hard drives and optical drives
- DDR2 SDRAM system memory
- 250W PFC power supply
- Protected by HP Services. Terms and conditions vary by country. Certain restrictions and exclusions apply.

Standard Features and Configurable Components

Processor and Speed Fixed on motherboard	VIA C7-D Model D Processor (1.8-GHz, 128-KB L2 cache, 800-MHz FSB)
Operating Systems and Application Software (availability varies by region)	Genuine Windows Vista Business 32* Genuine Windows Vista Home Basic* Genuine Windows Vista Business downgrade to Windows XP Professional custom installed*† Genuine Windows XP Home Red Flag Free DOS * Certain Windows Vista product features require advanced or additional hardware. See http://www.microsoft.com/windowsvista/getready/hardwarereqs.mspx and http://www.microsoft.com/windowsvista/getready/capable.mspx for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit http://www.windowsvista.com/upgradeadvisor. † Windows Vista Business disk also included for future upgrade if desired. To qualify for this downgrade an end user must be a business (including governmental or educational institutions) and is expected to order annually at least 25 customer systems with the same custom image. Microsoft Office 2007 Basic Microsoft Office 2007 Small Business Microsoft Office 2007 Professional HP Backup and Recovery Manager Mozilla Firefox for HP Virtual Solutions Hard Disk Partitioning Roxio Easy Media Creator 10** Corel WinDVD 8** McAfee Total Protection Anti-Virus*** PDF Complete HP Power Manager v2.0 (Edison) HP Total Care Advisor HP Total Care Setup Vision Diagnostics Sun Java Runtime Environment Welcome Center SMB Offers PC Network Clone USB port disable ** Supporting software available with certain optical drive configurations *** 60 day trial period for McAfee Total Protection for Small Business software. Internet access required to receive updates. First update included. Subscription required for updates thereafter.
Hard Drives	80-GB Serial ATA 3.0-Gb/s Hard Drive (8MB, 7200 rpm) 160-GB Serial ATA 3.0-Gb/s Hard Drive (8MB, 7200 rpm) 250-GB Serial ATA 3.0-Gb/s Hard Drive (8MB, 7200 rpm) 320-GB Serial ATA 3.0-Gb/s Hard Drive (8MB, 7200 rpm)

Standard Features and Configurable Components

System Memory	1-GB DDR2 Synch DRAM PC2-6400 (system downgrades it to PC2-5300 667-MHz) Non-ECC (1 x 1GB) 2-GB DDR2 Synch DRAM PC2-6400 (system downgrades it to PC2-5300 667-MHz) Non-ECC (2 x 1GB) 2-GB DDR2 Synch DRAM PC2-6400 (system downgrades it to PC2-5300 667-MHz) Non-ECC (1 x 2GB) 4-GB DDR2 Synch DRAM PC2-6400 (system downgrades it to PC2-5300 667-MHz) Non-ECC (2 x 2GB) **NOTE:** For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.
Storage – One or more of the following (see Storage section below)	**Diskette Drive** 1.44 MB Diskette Drive **Media Reader** HP 22-in-1 Media Reader with 1394 HP 22-in-1 Media Reader **Optical Drives** (Serial ATA) SATA DVD-ROM Drive SATA SuperMulti LightScribe DVD Writer Drive
Input Devices	**Keyboard – One of the following** HP PS/2 Standard Keyboard HP USB Standard Keyboard **Mouse – One of the following** PS/2 2-Button Optical Scroll Mouse USB 2-Button Optical Scroll Mouse USB 2-Button Laser Mouse
Audio	Realtek ALC662 High Definition audio codec 3D audio compliant with AC'97 Rev. 2.3 and HD Audio compatible Internal PC speaker MT
Communication	Realtek 8110SC GbE Ethernet Controller
Graphics	VIA Chrome9™ HC Integrated Graphics with 2D / 3D / Video Controllers ATI Radeon HD 3450 256MB Single Head PCIe x16 Card
Security	MT Port control cover HP Chassis Security Kit (1 bay filler) HP Chassis Security Kit (2 bay fillers)

Standard Features and Configurable Components

Miscellaneous	2nd serial port

System Details

Base Unit	• Micro ATX Microtower chassis, including power supply and front bezel; five (5) drive bays and four expansion slots • Passive type CPU heatsink • 92 x 92 x 25 mm chassis fan for Microtower chassis • System board with VIA C7-D Model D 1.8G Processor, VIA CN896 north bridge, VIA VT8237S south bridge, Realtek RTL8110SC Ethernet controller, VIA Chrome9™ HC Integrated Graphics, and Realtek audio, (1) PCI Express x1 slots, (1) PCI Express x16 slot, (2) PCI, (2) DDR2 DIMM memory slots, (2) Serial ATA data connectors, (6) USB Ports (see USB support below), (1) Parallel and (1) serial port in the rear IO • Power cord	
Slots	**PCI**	One (1) full-height PCI Express x1 slots on PCA One (1) full-height PCI Express x16 slot on PCA (for graphic cards) Two (2) full-height PCI slots on PCA
	Memory Expansion	Two (2) DDR2 SDRAM DIMM slots (4 GB maximum memory support)
	NOTE: For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.	
Bays	**Internal**	Two (2) 3.5-inch
	External	Two (2) 5.25-inch; One (1) 3.5-inch
USB Support	EHCI high-speed USB 2.0 controller Two (2) front ports; Four (4) rear ports, two (2) internal ports on system board (one for front ports, one for media card reader)	
Interfaces (Legacy)	One (1) PS/2 keyboard port One (1) PS/2 mouse port One (1) analog VGA video port One (1) Parallel port One (1) serial port One (1) line in or Rear Speaker Out (for 4 or 5.1 channel); one (1) line out or Front Speaker Out (for 4 or 5.1 channel); one (1) Mic in or Center/Subwoofer Speaker Out (for 5.1 channel only) One (1) RJ45 network port	
Weight & Dimensions	**Chassis Dimensions** (H x W x D)	14.05 x 6.89 x 16.38 in 357 x 175 x 416 mm
	Packaged Dimensions (L x W x H)	23.31 x 19.38 x 11.75 in 592.1 x 492.1 x 298.3 mm
	System Weight	16.3 lb (7.4 kg)
	Shipping Weight	23.1 lb (10.5 kg)

System Details

Technology and Features	**Memory Type**	PC2-6400 DDR2 SDRAM (system downgrades it to PC2-5300 667-MHz) non-ECC Up to 4 GB system memory standard
	NOTE: For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.	
	Hard Drive Interfaces Supported	Serial ATA 2.5
Chassis	**Front Panel**	Power button Power On LED HDD Activity LED
	Cooling Solutions Supported	Power Supply Fan (variable speed) Passive CPU heatsink Chassis fan (variable speed)
	Slots Supported	Four (4) full-height expansion slots
	Front I/O	Two (2) USB 2.0 ports, Headphone, Mic
	Rear I/O	Standard Micro ATX I/O connectors, including four (4) USB 2.0 ports, serial and parallel ports
	Drive Bays (MT)	Two (2) 5.25-inch (13.335 cm) half height external One (1) 3.5-inch (8.89 cm) half height external Two (2) 3.5-inch (8.89 cm) half height internal
	Internal Speaker	Optional
	Security	Padlock loop Kensington Lock Support Noble Universal Clamp Lock Cable Kit MT Port control cover
	Power Supply	250W ATX Power Supply – PFC with a 115v/230v line switch (varies by country/region)

System Details

Unit Environment and Operating Conditions

General Unit Operating Guidelines

- Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range.
- Leave a 4 in (10.2 cm) clearance on all vented sides of the computer to permit the required airflow.
- Never restrict airflow into the computer by blocking any vents or air intakes.
- Do not stack computers on top of each other or place computers so near each other that they are subject to each other's re-circulated or preheated air.
- Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow.
- If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.

Temperature Range (MT)	**Operating**	50° to 95° F (10° to 35° C)
	Non-operating	–22° to 140° F (–30° to 60° C)
Relative Humidity (MT)	**Operating**	10% to 90% (non-condensing at ambient)
	Non-operating	5% to 95% (non-condensing at ambient)
Maximum Altitude (MT) (unpressurized)	**Operating**	10,000 ft (3048 m)
	Non-operating	30,000 ft (9000 m)

NOTE: Operating temperature is de-rated 1.0 deg C per 1000 ft (300 m) to 10000 ft (3048 m) for MT above sea level, no direct sustained sunlight. Maximum rate of change is 7.5 deg C/Hr for MT. The upper limit may be limited by the type and number of options installed.

System Board	**Processor**	Fixed with VIA C7-D Model D Processor (1.8-GHz, 128-KB L2 cache, 800-MHz FSB)
	PWM	Intersil 9501 – 1 phase
	Chipset	VIA CN896 VIA VT8237S
	Super I/O	Winbond W83202G
	Front Side Bus Frequency	800 MHz
	Memory	DDR2 SDRAM 2 x DIMM slots
	Clock Generator	ICS9LPR704
	Integrated Graphics	VIA Chrome9™ HC Integrated Graphics
	Audio	Realtek ALC662 HD Audio compatible codec with 5.1 channel audio 3D audio compliant with AC'97 rev. 2.3
	LOM	Realtek RTL8110SC
	Storage	Two (2) Serial ATA interfaces
	Expansion Slots	1 x PCI Express x1 slots 1 x PCI Express x16 slot 2 x PCI
	BIOS	SPI FLASH ROM
	Industrial Standard	PCIe 1.1 compliant USB 2.0
	Rear Side I/O Ports	1 x PS/2 Keyboard port

System Details

	1 x PS/2 mouse port 4 x USB 2.0 ports 1 x RJ-45 10/100/1000 port 1 x serial port 1 x parallel port 1 x D-sub 15 pin analog VGA port 3 x audio ports
On Board I/O Interfaces	1 x ATX power connector 1 x +12V power connector 1 x Floppy connector 1 x COM2 header 1 x Front panel connector, Switch, LED (ON/Flash/OFF) 2 x Fan headers for CPU(reserved), chassis, with voltage/fan speed control 1 x header (1 – 2x5) to support 2 USB 2.0 ports at front side 1 x header (1 – 2x5) to support USB Card Media Reader 1 x header to support 2 front (Headphone/Mic) audio ports 1 x header (1 – 1x2) to support internal speaker
Board Size	Micro-ATX, PCB Size: 9.6 x 9.6 in (24.38 x 24.38 cm) 4-layer PCB with green color
Additional Features	• Bootable without keyboard, mouse or monitor • Keyboard/mouse/USB wake up • Support S3, S4 and S5 • ACPI status • Hardware monitor capability • CPU fan speed control

Network Interface	Realtek 8110SC GbE Ethernet Controller

Power Supply	• 250W ATX Power Supply – Passive PFC with a 115v/230v line switch • 90 to 140VAC, or 180 to 264VAC operating voltage range • 100 to 127VAC, or 200 to 240VAC rated voltage range • 50-60 Hz rated line frequency • 47-63 Hz operating line frequency range • 250 watt maximum rated power • 80-mm power supply fan – variable speed for optimum acoustics

Power Conservation 'Energy Saver'	• APM 1.2 support • Screen blanking • Hard drive 'Idle' mode • System Idle mode • ~2 watt power consumption in ES mode – suspend to RAM (S3) (instantly available PC) • Processor/Cache memory power-down (S3)

System Details

System Environmental Specs

- Values are subject to change without notification and are for reference only.
- Performance of system, options, and ancillary equipment will vary depending on the system configuration.
- Levels presented do not account for non-HP/Compaq installed hardware.

Ambient Air Temperature	**Operating**	MT: Operating 50° to 95°F (10 to 35°C) at sea level with an altitude de-rating of 1.0°C per every 1000 ft (300 m) above sea level to a maximum of 10000 ft (3048 m), no direct sustained sunlight. Maximum rate of change is 50°F/Hr (10°C/Hr). The upper limit may be limited by the type and number of options installed.
	Storage	MT: Storage: 90% RH @ 60°C for 12 hours (Non-condensing)
Humidity	**Operating**	MT: 10% to 90% relative humidity (Rh), 35°C non-condensing
	Storage	MT: 90% relative humidity (Rh), 60°C for 12 hours, non-condensing
Altitude	**Operating**	MT: 0 to 10,000 feet (0 to 3048 meters) – This value may be limited by the type and number of options installed.
	Non-Operating	MT: 0 to 30,000 feet (0 to 9,144 meters)
Shock	Listed are the levels of shock the product can withstand with No damage being incurred. The values represent peak input acceleration during an 11 ms trapezoidal shock pulse.	
	Non-Operating	MT: 40G's (Trapezoidal Shock)
Vibration	Listed are the levels of vibration the product can withstand with No damage being incurred. The values represent a flat random vibration input acceleration profile across the given frequency range.	
	Operating	MT: Random vibration at 5Hz@0.00025G²/Hz, 10Hz@0.01G²/Hz, 100Hz@0.01G²/Hz, 300Hz@0.00001G²/Hz 5Hz to 300Hz, (0.25G's nominal).
	Non-Operating	MT: ~2.09Grms (5-500Hz), Non-Operational
Acoustic Noise	Listed are the declared A-WEIGHTED SOUND POWER LEVELS (LWAd) and declared average desktop seated operator position A-WEIGHTED SOUND PRESSURE LEVELS (LpAm) when the product is operating in a 73.4°F (23°C) ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
	MT: IDLE (Fixed disk drive spinning)	LWAd = 4.3 Bels, Desktop Average LpAm = 32 dBA
	MT: DVD-ROM (Sequential Reads)	LWAd = 5.5 Bels, Deskside Average LpAm = 44dBA

System Details

Service and Support

On-site Warranty[Note 1]: 1-1-1 limited warranty delivers on-site, next business-day[Note 2]: service for parts and labor and includes free telephone support[Note 3]: 24 x 7. Global coverage[Note 2]: ensures that any product purchased in one country and transferred to another non-restricted country will remain fully covered under the original warranty and service offering. One-year onsite and labor are not available in all countries.

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

NOTE 3: Technical telephone support applies only to HP-configured Compaq and third-party HP-qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

After-Market Options

Hard Disk Drives	HP 320-GB SATA 3.0-Gb/s Hard Drive	FH963AA
	HP 250-GB SATA 3.0-Gb/s Hard Drive	PY278AA
	HP 160-GB SATA 3.0-Gb/s Hard Drive	PY277AA
	HP 80-GB SATA 3.0-Gb/s Hard Drive	PY276AA
Removable Storage Devices	**Diskette Drive**	
	HP 1.44-MB USB Diskette Drive – External	DC141B
	HP 1.44-MB Std Internal Floppy Drive	AH053AA
	22-in-1 Media Reader	FX273AA
Input Devices	**Keyboards**	
	HP PS/2 Standard Keyboard	DT527A
	HP USB Standard Keyboard	DT528A
	Mice	
	HP PS/2 2-Button Optical Scroll Mouse	EY703AA
	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP USB 2-Button Laser Mouse	GW405AA
Memory	HP 1-GB PC2-6400 (DDR2 800-MHz) DIMM	AH058AA
	HP 2-GB PC2-6400 (DDR2 800 MHz) DIMM	AH060AA
Optical Drives	HP SATA DVD-ROM Drive	AH047AA
	HP SATA SuperMulti LightScribe DVD Writer Drive	GF343AA
Security	HP Business PC Security Lock Kit	PV606AA
	Security Cable with Kensington Lock	PC766A
	HP Chassis Security Kit	AR639AA
Miscellaneous Accessories	HP 2nd Serial Port Adapter	PA716A

Memory

DDR SYNCH DRAM NON-ECC MEMORY

The VIA CN896 chipset supports non-ECC DDR2 memory up to PC2-5300 (667-MHz). Memory upgrades are accomplished by adding single or multiple DIMMs of the same or varied sizes. This chart does not represent all possible memory configurations.

CAUTION: You must shut down the computer and disconnect the power cord before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the computer is plugged in to an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

STANDARD MEMORY

1-GB, 2-GB DDR2 SYNCH DRAM

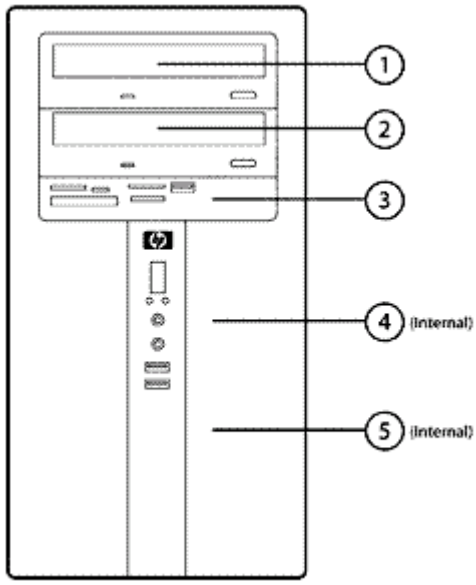
OPTIONAL MEMORY UPGRADES

Supports up to 4-GB of DDR2 SYNCH DRAM. Not all memory configurations possible are represented below.

NOTE: For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.

DIMM Size	Slot 1	Slot 2
1-GB	1-GB	
2-GB	1-GB	1-GB
2-GB	2-GB	
4-GB	2-GB	2-GB

Storage



HP Compaq dx2040 Microtower Business PC

	Maximum Quantity Supported	Position Supported	Controller
Drive Support			
Diskette Drives	1	3	SIO
Media Reader	1	4	Internal USB 2.0 port
DVD-ROM Drives	2	1, 2	SATA
SuperMulti LightScribe Drives	2	1, 2	SATA
3.5” Serial ATA Hard Drives	2	4, 5	SATA

Technical Specifications

Integrated Realtek ALC662-GR Audio	**Type**	Integrated
	High Definition Stereo Codec	Yes
	Sampling (DAC and ADC)	Supports 44.1/48/96 KHz
	Audio Jacks	Mic-In (for 2.1 channel) or Center/Subwoofer Speaker Out (for 5.1 channel only)
		Line-In (for 2.1 channel) or Rear Speaker Out (for 4 or 5.1 channel)
		Line-Out (for 2.1 channel) or Front Speaker Out (for 4 or 5.1 channel)
	Power Support	Digital: 3.3V
		Analog: 3.0 to ~5.0 V
	Other	Meets Microsoft Windows Vista (WLP 3.08) Premium requirements High-performance DACs with 98dB SNR(A-Weighting) ADCs with 90dB SNR (A-Weighting)
Integrated Realtek 8110C Ethernet Controller	**Connector**	RJ45
	Controller	Realtek 8110SC Gigabit Ethernet Controller
	Memory	Transmit/Receive on-chip buffer support
	Data rates supported	1.056 GHz data rate with 32 bits link width
	Compliance	IEEE 802.1P, 802.1Q, 802.3, 802.3AB and 802.3u compliant, 802.3x flow control
	Bus architecture	PCI 2.3
	Data transfer mode	DMA
	Power requirement (LOM)	1000 mbps (TxRx) max.824 mW 100 mbps (TxRx) max.289 mW 10 mbps (TxRx) max.297 mW D3 hot with Link (10M) 287 mW D3 hot without Link 132 mW D3 cold with Link (10M) 275 mW Link D3 cold without Link 121 mW Link
	Network transfer rate	10/100/1000 Mbps over CAT.5
		100/1000 Mbps over CAT.3
		10 Mbps over CAT.3
	Dimensions	14mm x 20mm
	Power Management	ACPI rev 2.0, PCI PM rev 1.2
Integrated VIA Chrome9™ HC Graphics	**3D/2D Controller**	Microsoft DirectX 9.0 programmable graphics engine
	VGA Controller	Integrated Chrome9™ HC IGP & Video Controller
	Bus Type	External PCI Express™ x16; Internal AGP 8x performance, AGP v3.5 compliant
	RAMDAC	CRT display interface with 24-bit true-color RAMDAC up to 300 MHz pixel rate
	Graphics Engine Clock	Graphics engine clocks up to 250 MHz
	Memory	Graphics memory is shared with system memory.

Windows XP Memory Usage:

Total System Memory (MB)	**Total Graphics Memory** (MB)
512MB > X	64
768MB > X ? 512MB	128
X ? 768MB	256

Windows Vista Memory Usage:
The same as WinXP

HW Video Decode
The CN896 North Bridge provides the ideal architecture for high quality MPEG-2 based video applications. For MPEG playback, the integrated video accelerator offloads the CPU by performing the motion compensation tasks, while its enhanced scaling algorithm delivers incredible full-screen video playback.

Maximum Color Depth
32 bits/pixel

Maximum Vertical Refresh Rate
Supports CRT resolutions up to 1920x1440 85Hz

Graphics/Video API Support
Full Software Support

- Microsoft DirectX 7.0, DirectX 8.0 and DirectX 9.0 compatible
- Supports OpenGL™
- Drivers for major operating systems and APIs: Windows XP, Windows Vista, Direct3D™, DirectDraw™ and DirectShow™, and OpenGL™ ICD for Windows XP and Windows Vista

Multi-display Support
Support for one CRT via the motherboard's VGA connector. Support for an additional DVI-D display via the optional DVI ADD2 card. Dual independent displays and dual synchronous (Twin or Clone mode) displays are supported.

Resolutions Supported
NOTE: Other resolutions may be available but are not recommended as they may not have been tested and qualified by HP.

	Maximum Refresh Rate (Hz)
Resolution	**Analog Connection**
640x480	**85**
800x600	**85**
1024x768	**85**
1280x1024	**85**
1440x900	**85**
1600x1200	**75**
1680x1050	**85**
1920x1200	**75**
1920x1440	**75**

ATI Radeon HD 3450 (256MB SH) PCIe Graphics Card

Bus type	PCI Express (x16 lanes)
Maximum vertical refresh rate	85 Hz
Display support	Integrated 400 MHz RAMDAC

Technical Specifications

Display max resolution	2560 x 1600 digital, 2048 x 1536 analog	
Board display options	Supports two displays via the DisplayPort and DVI connectors	
Board configuration	**Specification**	**Description**
	Graphics Chip	RV620
	Core clock	750 MHz
	Memory clock	500 MHz
	Frame buffer	256 MB DDR2, 128 bit wide
Languages supported	24 languages: English, Arabic, Chinese Simplified, Chinese Traditional, Czechoslovakian, Danish, Dutch, Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Thai, Turkish	
Core power	22 W	
Dimensions	2.71 in x 6.60 in (68.90 mm x 167.65 mm)	
Compliance standards	EMC Emissions:	

a. FCC Part 15, Subpart B - Unintentional Radiators, Class B Computing Devices for Home & Office Use
b. Taiwanese Standard BSMI
c. Australian C-Tick
d. Korean (MIC)

EMC Immunity:
CISPR 24:1997/EN 55024:1998 – Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement.

ATI Radeon HD 3450 (256MB SH) PCIe Graphics Card display resolutions and refresh rates

NOTE: Other resolutions may be available but are not recommended as they may not have been tested and qualified by HP.

Resolution	Maximum Refresh Rate (Hz)	
	Analog Connection	Digital Connection
640x480	85	60
800x600	85	60
1024x768	85	60
1280x720	85	60
1280x1024	85	60
1440x900	75	60
1600x1200	85	60
1680x1050	75	60
1920x1080	85	60-R
1920x1200	85	60-R
1920x1440	85	N/A
2048x1536	75	N/A
2560x1600	N/A	60*

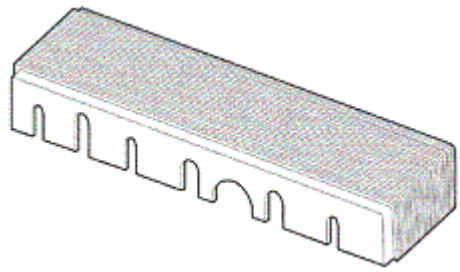
* Only supported when using a dual-link DVI or DP connection
NOTE: 60-R denotes reduced blanking timings are used on single-link DVI connections and may be used with other digital connections

HP PS/2 or USB Standard Keyboard		**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11880_div/11880_div.html (Worldwide)
HP USB 2-Button Laser Mouse		**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12912_div/12912_div.html (Worldwide)
HP PS/2 2-Button Optical Scroll Mouse		**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12490_div/12490_div.html (Worldwide)
HP USB Optical Scroll Mouse		**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11356_div/11356_div.html (Worldwide)
Serial ATA 3.0-Gb/s Hard Drives (7200 rpm)	**80 GB** **160 GB** **250 GB** **320 GB**	**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11356_div/11356_div.html (Worldwide)
SATA DVD-ROM Drive		**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12548_div/12548_div.html (Worldwide)
HP SATA SuperMulti LightScribe Drive		**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12739_div/12739_div.html (Worldwide)

Technical Specifications

MT Port control cover

Prevent access to ports at the back of your HP Compaq Business Desktop with a rear port controller cover.



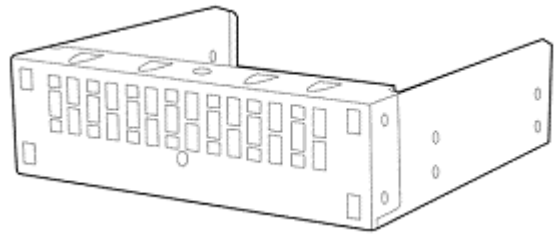
MT Port control cover

Key Benefits

- Prevent access to rear ports
- Enhances security and convenience

HP Chassis Security Kit

Prevent access to or removal of internal components like memory, hard drive, and power supply, particularly designed for the education market.



Chassis Security Kit

Key Benefits

Protect your investment and help keep the system up and running by:

- Safeguarding the memory and hard drive with a metal bay filler
- Securing the power supply with two screws
- Preventing cable disconnection
- Locking down the front bezel so that internal components cannot be removed

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Technical Specifications

HP 1.44-MB Diskette Drive	**Size**	3.5 in (8.89 cm)	
	LED Indicators (front panel)	Green	
	Read/Write Capacity per Diskette (high/low)	1.44 MB/720 KB	
	Drive Height	One-third	
	Drive Rotation	300 rpm	
	Transfer Rate (high/low)	500/250 KB/s	
	Bytes/Sector	512	
	Sectors/Track (high/low)	18/9	
	Tracks/Side (high/low)	80/80	
	Access Times	**Track-to-Track** (high/low)	3/6 ms
		Average (high/low)	94/173 ms
		Settling Time	15 ms
		Latency Average	100 ms
	Cylinders (high/low)	80/80	
	Read/Write Heads	Two	

HP 22-in-1 Media Card Reader	**USB Interface**	USB 2.0 High-speed device via PCI card or pass -through via internal USB port of system board
	Advance protocol support	• Supports hardware ECC (Error Correction Code) function • Supports hardware CRC (Cyclic Redundancy Check) function • Supports MS 4-bit parallel transfer mode • Supports MS-PRO 4-bit parallel transfer mode • Supports SD 4-bit parallel transfer mode • Supports high-speed 50 MHz SD 4-bit card (version 1.1) • Support high-speed 52 MHz MultiMediaCard 8-bit card (version 4.x)
	Supported media types	• Supports CompactFlash Card Type I (CF I), CompactFlash Card Type II (CF II),MicroDrive (MD) • Supports 3.3V SmartMedia Card (SM), SmartMedia ROM (SM ROM), Picture Card • Supports Secure Digital Card (SD), Secure Digital ROM Card (SD ROM), miniSD, MultiMediaCard, Secure MultiMediaCard (Secure MultiMediaCard), ROM Type MultiMediaCard (MultiMediaCard ROM), Reduced Size MultiMediaCard (RS MultiMediaCard), MultiMediaCard 4.0 (MultiMediaCard Plus), Reduced Size MultiMediaCard 4.0 (MultiMediaCard Mobile) • Support Memory Stick (MS), Memory Stick ROM (MS ROM), MagicGate Memory Stick (MG), Memory Stick Select, Memory Stick Duo (MS Duo), Memory Stick PRO (MS-PRO), Memory Stick PRO Duo (MS PRO Duo)
	Mechanical	**Length** (3.5”) 124.7 cm **Width** (3.5”) 101.6 cm **Height** (3.5”) 25.4 cm

		Length (5.25")	171.6 cm
		Width (5.25")	148.9 cm
		Height (5.25")	42.7 cm
	Environmental	**Operational Environmental Extremes**	Test Parameters/Conditions - Power applied, unit operating on system ±5% nominal supply voltage. 10°C 10% R.H. = 24 hours 10°C 90% R.H. = 24 hours 20°C 90% R.H. = 24 hours 30°C 90% R.H. = 24 hours 40°C 90% R.H. = 24 hours 50°C 90% R.H. = 24 hours 50°C 10% R.H. = 24 hours
		Storage Environmental Extremes	Test Parameters/Conditions 140°F (60°C) @ 80% R.H. for 96 hours -22°F (-30°C) @ 20% R.H. for 48 hours No power applied Delta °C < 1.0°C/min Delta % R.H. < 1.5% R.H./min
	Approvals	USB-IF, WHQL, Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0, Compliant Intel Front Panel I/O Connectivity Design Guide V. 1.2 FCC, CE, BSMI, C-Tick, VCCI, MIC, cUL, TUV-T	

Eco Data

Eco-Label Certifications

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- IT ECO declaration

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Microtower is based on a typically configured product.

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	54.574 W	53.929 W	55.909 W
Sleep (Energy Star low power mode)	3.9259 W	2.4322 W	3.6893 W
Off	2.1565 W	2.1951 W	1.9726 W

Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	187 BTU/hr	185 BTU/hr	191 BTU/hr
Sleep	13 BTU/hr	14 BTU/hr	13 BTU/hr
Off	7 BTU/hr	8 BTU/hr	7 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Declared Noise Emissions
(in accordance with
ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	4.3	32
Fixed Disk (random writes)	5.0	44

Batteries

Batteries used in the product do not contain:

Mercury greater the 5ppm by weight
Cadmium greater than 10ppm by weight

Battery size: CR2032 (coin cell)
Battery type: Lithium

Additional information:

This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive – 2002/95/EC.

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% post consumer recycled plastic (by wt.)

This product is 92.2% recyclable when properly disposed of at end of life.

Packaging Materials

- External:
  - Polyethylene low density 5 g
- Internal:
  - EPE-Expanded Polyethylene 25 g

- The EPE foam packaging material is made from 0% recycled content.
- The Polyethylene low density packaging materials contains at least 0% recycled content.

RoHS Compliance

Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically

	feasible alternative (as indicated by an exemption under the EU RoHS Directive).
Material Usage	This product does not contain any of the following substances in excess of regulatory limits (for reference of these limits please refer to the HP General Specification of the Environment (http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html): • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel - finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
Packaging	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office.

Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Hewlett-Packard Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report
http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
Environment website
http://www.hp.com/environment
Eco-label certifications
http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html
ISO 14001 certificates:
http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html

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